

What is claimed is:

1. A communication system comprising:
a plurality of nodes, each node including an optical switch to controllably route a plurality of in-ports of the optical switch into a plurality of out-ports of the optical switch; and
a plurality of point-to-point links that interconnect the plurality of nodes into a network, each point-to-point link including a free space optical channel, a first free space optical channel coupling to a first node through a receive path and through a transmit path, the receive path coupling to a respective in-port of the optical switch of the first node, the transmit path coupling to a respective out-port of the optical switch of the first node.
2. The communication system of claim 1 further comprising a wireless network control system coupled to each of the nodes.
3. The communication system of claim 2, wherein the wireless network control system includes a network controller and a commercial cellular telephone system coupling the network controller to each of the nodes.
4. The communication system of claim 2, wherein:
each node includes a link monitor to assess a transmission quality of each link coupled to the respective node; and
the wireless network control system includes circuitry to receive the transmission qualities of the links coupled to each respective node and to control the optical switches of the nodes to route communication traffic around links having a degraded transmission quality.
5. The communication system of claim 1, wherein each point-to-point link further includes a radio channel that complements the respective free space optical channel.

6. The communication system of claim 5, wherein:
the radio channel propagates better than the free space optical channel through fog; and
the free space optical channel propagates better than the radio channel through rain.
7. The communication system of claim 1, wherein the optical switch of each node is a micro electro-optical mirror switch.
8. The communication system of claim 1, wherein the first node includes an electrical add drop multiplexer.
9. The communication system of claim 1, wherein the first node includes an optical add/drop multiplexer.
10. The communication system of claim 1, further comprising an outdoor unit that includes an optical telescope.
11. The communication system of claim 10, wherein a second node include the outdoor unit, the outdoor unit of the second link including at least one gimble and corresponding servo controller.
12. The communication system of claim 1, wherein each of the plurality of point-to-point links include a dedicated data field to provide 911 service.
13. A communication hub comprising:
a plurality of neighborhood links to corresponding users;
an optical switch coupled to the plurality of neighborhood links; and
a trunk coupled between the optical switch and a free space optical channel link to the network.

14. The communication hub of claim 13 further comprising a switch to selectably couple the trunk between the optical switch and one of an optical fiber link to the network and the free space optical channel link to the network.

15. The communication hub of claim 13 further comprising a wireless network control system coupled to the optical switch.

16. The communication hub of claim 13, wherein the free space optical channel link includes a radio channel link that complements the free space optical channel link.

17. A method of communicating in a network having plural links, comprising steps of:

sensing the presence of a received signal failure by monitoring channel losses in a first link, the received signal failure resulting from at least one of rain and fog;

sending data in a free space optical channel of the first link when a received signal failure is sensed due to rain; and

sending a message in an RF channel of the first link when a received signal failure is sensed due to fog.

18. The method of claim 17, further comprising a step of routing the data over the plural links by sending routing commands over a mobile radio system.

19. The method of claim 18, wherein:

the step of sensing determines that the first link is unavailable when the channel losses sensed for both the RF channel and the free space optical channel are greater than a predetermined loss; and

the step of routing routes the message around the first link when the step of sensing determines that the first link is unavailable.